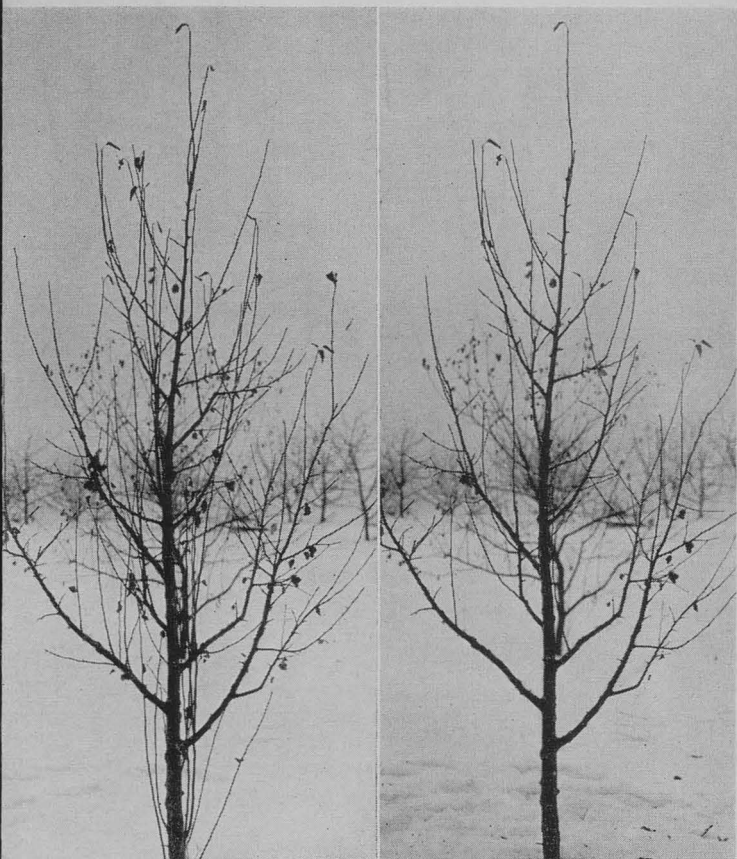


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February 1952

# Pruning Fruit Trees

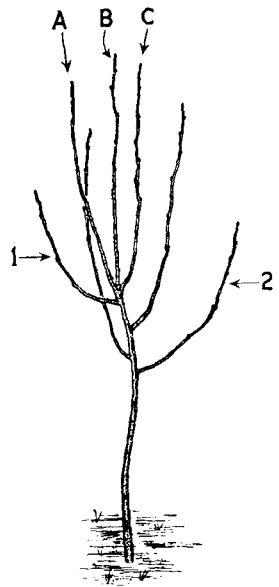


Before and After Pruning

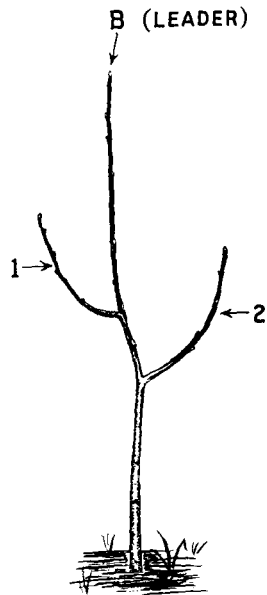
**T. S. WEIR and L. C. SNYDER**

UNIVERSITY OF MINNESOTA  
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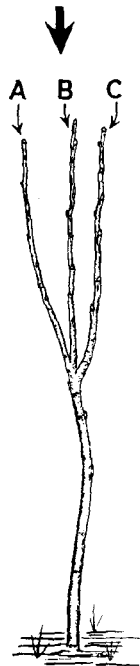
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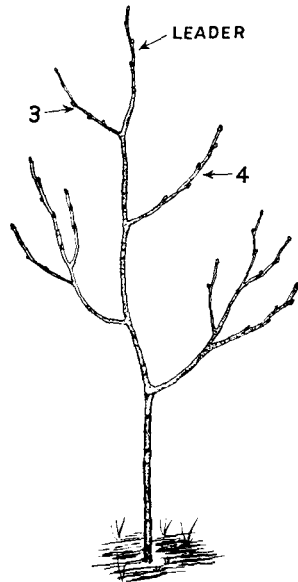
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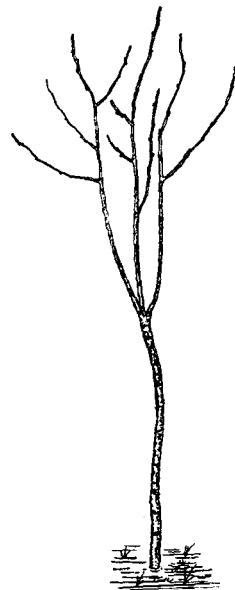
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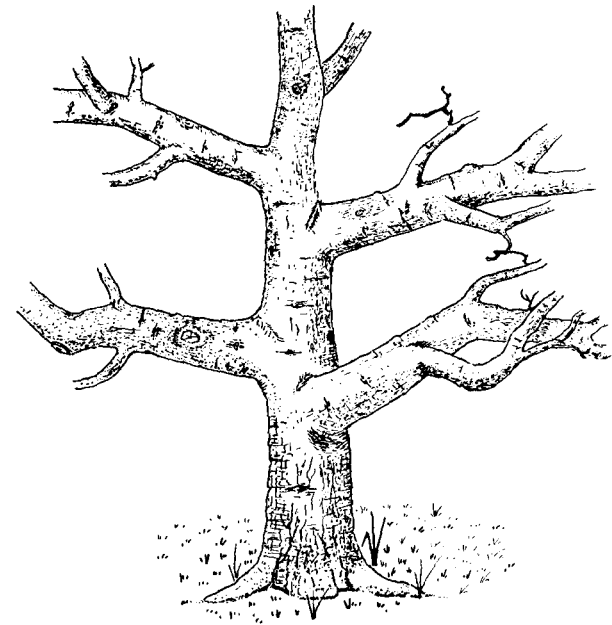
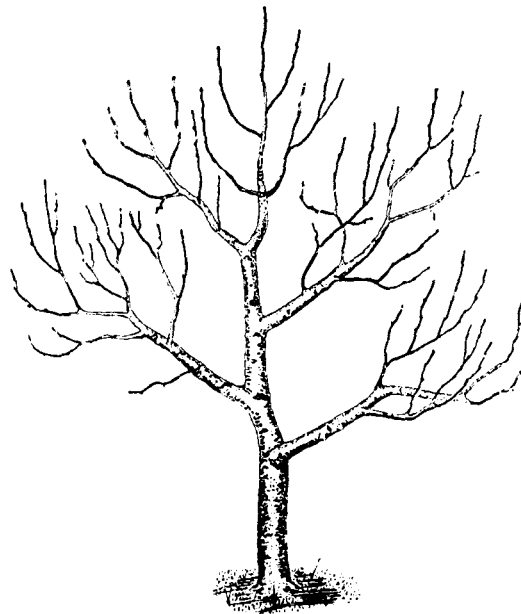
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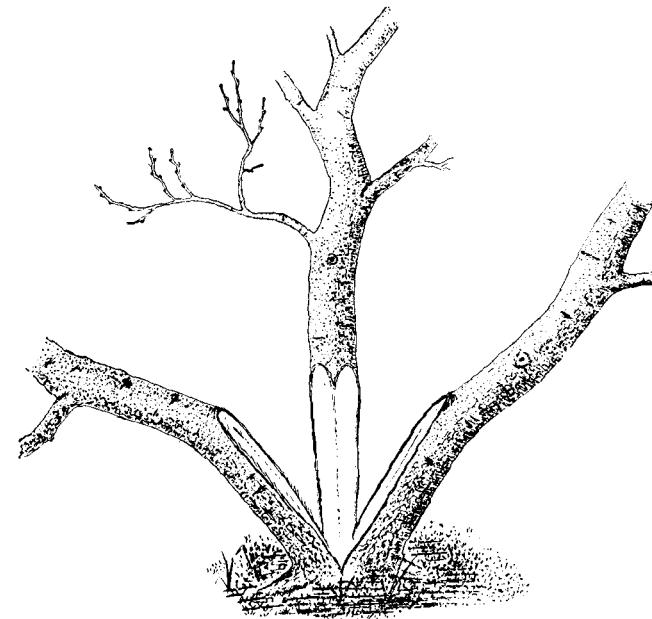
**A Year  
Later**



**Six to Eight  
Years Later**



**Mature  
Tree**



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# Hints on Pruning

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## Pruning Tools

There are many kinds of pruning tools on the market. Most of them are good.

**For young trees** a hand shear is very good, but a sharp knife can be used. In selecting a shear, a well-made 8- or 9-inch hand shear of good quality steel is best.

**For larger cuts** a hand pruning saw is best, but a carpenter's saw can be used. One of the best saws is the meat saw type with a swivelled 22-inch removable blade. The lopping shear with two-foot handles will cut branches 1½ inches in diameter.

The pole pruner and the pole saw will make cuts high above the ground, but these are not always clean cuts. They do save much climbing and can be very useful if handled properly.



**Lopping shear, pruning saw, and hand shear**

## When to Prune

Start training the young tree as soon as it is planted. At this time the root system is much reduced from being dug in the nursery. A careful pruning not only will help compensate for loss of roots but also will begin to shape the tree properly.

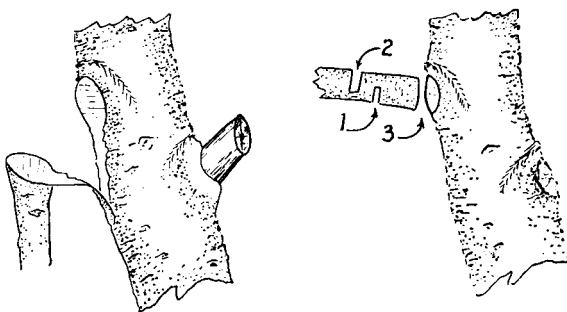
Do your pruning in the dormant season when the leaves are off. Late March or early April—just before growth starts in the spring—is best for

rapid healing of pruning wounds. In addition, a certain amount of summer pruning is desirable in training young trees.

### Making the Cuts

In cutting off a branch or shoot, make all cuts close to the member from which the part is cut. **Never leave stubs.** This is even more important with large branches.

An important precaution in removing large branches is first to **undercut** the branch a foot or two from the trunk. Then cut from above at a point an inch or two out from the undercut. After the branch is off, cut off the stub. (See picture.)



Some training can be done by the position of the cut. Upward-growing shoots or branches can be partly directed outward by cutting just above an outside bud or branch. A downward-pointing branch can be directed upward by cutting back to an inside- or upward-pointing member.

### Painting the Wounds

Pruning scars under  $1\frac{1}{2}$  inches in diameter need no dressing. Larger wounds take longer to heal over and may benefit from a dressing. Many substances can be used, but grafting wax or orange shellac are very satisfactory and do not injure the cambium. This cambium, just under the bark, produces the new tissue to cover scars.

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## Pruning Young Apple Trees

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Pruning young trees tends to dwarf or retard growth. Nevertheless, this is an important practice for the young tree to get the right start. To prune properly, it is necessary to have a definite objective in mind.

Trees may be trained in many different forms. The popular form of the apple tree today is the

**leader** type. Its chief characteristic is the central trunk with scaffold branches growing from it. One of the best examples of the leader type is the pine tree.

The trunk should be definitely larger than the branches, and the branches should be well separated up the trunk. The lowest branch should be two to three feet from the ground, but this is a matter of personal choice.

A variety with wide-spreading branches should have the first branch starting higher than one with upright branches.

Young two-year-old trees received from the nursery will have several branches, each not more than about three inches apart. It will also have one, two, or more leaders—the upward top shoots of the tree. Cut off all but one of these leaders. If there are two or three leaders they form narrow V crotches where they join. Such crotches are weak and tend to break in a storm or under a heavy crop.

After choosing one leader, select the first or lowest branch for your tree. It is important that all these scaffold branches have wide angles where they join the trunk. See illustrations, page 2-4.

The first year of training usually produces a tree with one—occasionally two—branches and a leader. Cut back very long leaders to about 20 inches. New lateral branches will grow from the leader next year. From these you can choose another scaffold branch or two. As the tree grows older and higher, cut the top off at about 10 feet. Make such a cut at the junction of a lateral branch. This form is then known as the **interrupted** or **modified** leader.

Five to eight scaffold branches are enough for a tree. The space between branches should be 8 to 18 inches, and they should be fairly evenly distributed around the central trunk. If certain branches are longer than the others, prune them back severely. When the permanent scaffold branches are selected, it is permissible to let other branches grow. But remove them in a year or two before they interfere with proper development of the permanent branches. Avoid branches with narrow crotch angles if possible.

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## Pruning Mature Apple Trees

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There is a vast difference between young wood and old wood. Young wood makes rapid growth (as much as 40 inches) and old wood slow growth (as little as two inches) during the year. The caliper

of young wood is thick, while old wood is thin. Young wood points upward, while old wood droops. Young wood is straight and unbranched, while old wood is crooked and branchy. Young wood bears large fruit of good color, while old wood bears small, poorly colored fruit.

When trees reach this old condition, they are no longer profitable. But they might produce good fruit if nitrogen fertilizer is applied and if they are severely pruned. If such trees are very tall, it will pay to cut back the tops to lower the height. Cutting tops back by 8 or 10 feet is a severe but necessary treatment.

The older tree that combines old, weak wood with some good growth will benefit by judicial pruning. Instead of cutting out water sprouts and the heavier terminal growth, cut out the weak, thin, droopy wood. Cut out any shoot growth that is pulled down by former crops or is shaded out by stronger shoots. The lack of sunlight will weaken or kill a tree branch just as the forest will shade out and kill grass.

Cut this kind of wood out when it begins to weaken instead of letting it continue producing smaller and more poorly colored fruit. The strong new growth remaining will produce fruit similar to that of young trees. In other words, the object is to have young wood on the old tree.

It may be necessary to cut out whole branches if they are too crowded, for it is important to let in light to the lower part of the tree. Old neglected trees may require more than one year for such a renovation. If a whole branch is cut out, it is called **thinning**. If it is cut back a part of its length, it is called **heading back**. Both operations are necessary in treating old trees.

Bearing shoots often have too many old spurs. If such wood is "headed back" a half or even three-quarters, the number of fruiting spurs is lessened but the quality of fruit is improved.

Many old trees bear only in alternate years. It is best to prune heavily just prior to the heavy-bearing year. If fruit buds can be recognized, much thinning of the crop can be done in the pruning operation.

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## Pruning Other Fruits

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### PEARS

Train the young pear tree at planting time to the same pattern as recommended for apples. Once the young pear tree is established, prune only lightly. The branches of most pear varieties tend

to grow upright, so they need to be spread. Cutting back to outward buds or shoots is not a good way to do this, because soft new growth is subject to fire blight.

To spread the tree put wooden "spreaders" in or near the crotches or tie the branches down or outward. Pear trees are very slow to begin bearing. As trees reach five or six years of age such tying down or bending of the upright branches tends to start fruit buds.

## **PLUMS**

Young plum trees may be trained in much the same way as young apple trees. Most plum varieties are wide spreading and so are adapted to the open-center system—one that does not attempt to maintain a leader. The more upright trees, such as some of the prune type plums, are better suited to the modified leader system explained earlier.

Plum trees are smaller and shorter lived than apples, so in selecting branches to form the head it is not necessary that the branches of plums be so widely separated. Also, plums bear on one-year wood and on vigorous spurs of older wood. Shoot growth of 10 to 20 inches should be encouraged on young trees and at least 10 inches on old trees.

Very old plum trees are difficult to renovate. Old apple trees, if cut back severely, will readily produce new shoots, but this is not true with old plum trees. Any "heading back" of large branches should be made at a side branch or shoot.

## **SOUR CHERRIES**

The modified leader type is best. Since sour cherries require little pruning, prune them as little as possible to avoid retarding production once the desired branches are selected.

In packing, shipping, and other handling of sour cherries it is important to note that the buds are large and prominent. Careless handling could rub off or damage many buds.

## **CHERRY-PLUMS**

These sand cherry hybrids—Sapa is an excellent example—bear when two years old and produce wonderfully for their first three or four years with little or no pruning.

After that, production and size of fruit is greatly reduced. They are short-lived plants at best. A 15-year-old tree is past its prime and perhaps no longer productive.

Cherry-plums are spreading-bush type. When young, pruning should be aimed at cutting back

shoots to reduce the crop, avoid breakage, and encourage new growth.

Later the plan should be to eliminate old wood and to encourage the production of new bearing shoots. If this program of renewal is started early, it can be done with small cuts. If delayed, it will be necessary to make large cuts which may start rots in the wood.

## OTHER STONE FRUITS

The Nanking cherry should not be trained as a tree. It is a bush and should be headed very low. The pruning should be aimed to produce vigorous shoots of new wood. This is best done by severely thinning out old wood as soon as signs of age or slow growth appear. With this fruit it is best to thin out whole shoots rather than "head back" shoots.

The Korean cherry is an even smaller bush than the Nanking and should be handled similarly. It is important to keep a supply of young strong shoots coming on each year.

## For Proper Pruning

- Use only sharp tools.
- Prune when the tree is first planted.
- Prune in late March or early April.
- Never leave stubs when you prune.
- Undercut all big branches before pruning.
- Be sure that the trunk is larger than the branches.
- Make sure the branches are well separated up the trunk.
- Prune so that the lowest branch is two or three feet from the ground.
- Always choose branches with wide crotches.

UNIVERSITY FARM, ST. PAUL 1, MINNESOTA

Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Service and United States Department of Agriculture Cooperating, Paul E. Miller, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30

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4-1-52



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